July 24, 2003

IN RE: DOCKET NO. 2002-367-C & 2002-408-C

COPY OF **DIRECT TESTIMONY OF ALLEN G. BUCKALEW FILED ON BEHALF OF THE CONSUMER ADVOCATE** HAS BEEN DISTRIBUTED TO THE FOLLOWING:

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DEPARTMENT OF CONSUMER AFFAIRS

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July 23, 2003

Honorable Gary E. Walsh
South Carolina Public Service Commission
P.O. Drawer 11649
Columbia, South Carolina 29211

Re: Generic Proceeding to Address Abuse of Market Position
Docket No. 2002-367-C

Re: Generic Proceeding to Define the Term "Inflation-Based Index"
Docket No. 2002-408-C

Dear Mr. Walsh:

Enclosed please find twenty-five (25) copies of the **Direct Testimony of Allen G. Buckalew** on behalf of the Consumer Advocate in the above referenced case. Copies have been served on all parties listed on the attached Certificate of Service.

Sincerely,

Elliott F. Elam, Jr.

Elliott F. Elam, Jr.
Acting Consumer Advocate

Enclosure(s)
cc: parties of record

CERTIFICATE OF SERVICE

This is to certify that I, Elliott F. Elam, Jr., have served this day the foregoing **Direct Testimony of Allen G. Buckalew** upon the person(s) named below, at the address(es) set forth, by deposit in the United States mail, postage prepaid.

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Elliott F. Elam, Jr.

July 23, 2003
Columbia, South Carolina

BEFORE THE PUBLIC SERVICE COMMISSION

OF SOUTH CAROLINA

IN THE MATTER OF:	
Generic Proceeding to Address the Definition of "Abuse of Market Position"	Docket No. 2002-367-C
and	
Generic Proceeding to Define the Term "Inflation-Based Index"	Docket No. 2002-408-C

DIRECT TESTIMONY

OF

ALLEN G. BUCKALEW

ON BEHALF OF

THE SOUTH CAROLINA CONSUMER ADVOCATE

JULY 23, 2003

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I. QUALIFICATIONS AND INTRODUCTION

Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A. My name is Allen G. Buckalew. I am an Economist specializing in the telecommunications industry at J.W. Wilson & Associates, Inc. Our offices are at 1601 North Kent Street, Rosslyn Plaza C – Suite 1104, Arlington, VA 22209.

Q. PLEASE OUTLINE YOUR EDUCATIONAL BACKGROUND.

A. I hold an A.A. and a B.S. degree with high honors, both from the University of Florida, and a M.S. degree from George Washington University. My major areas of concentration were economics and telecommunications.

Q. HOW HAVE YOU BEEN EMPLOYED IN THE PAST?

A. Before I entered the University of Florida, I worked for four years in Naval Telecommunications. After graduating from the University of Florida, I worked for four years at the Federal Communications Commission ("FCC") as an Industry Economist in the Common Carrier Bureau and was employed extensively in areas involving telecommunications, economics, accounting, engineering, and policy matters. For example, one of my major projects was "The Economic Implications

and Interrelationships Arising from Policies and Practices Relating to Customer Interconnection, Jurisdictional Separations and Rate Structures," (Docket No. 20003). This case opened the terminal equipment (*e.g.*, telephone sets, and private branch exchanges ("PBXs")) market in the United States to competition. I also provided economic analysis in several rate cases. For example, "Communications Satellite Corporation, Investigation into Charges, Practices, Classifications, Rates and Regulations," (Docket No. 16070). My major responsibility was to serve as economic advisor and analyst for the Common Carrier Bureau.

After the FCC, I was appointed Associate Director for Telecommunications Research of the National Regulatory Research Institute ("NRRI" or "Institute") at Ohio State University. My responsibilities at NRRI focused on telecommunications policy as seen from an analytical perspective that combined accounting, engineering, and economic disciplines. During my employment at the Institute, I completed several studies for state public utility commissions, including "The Impact of Measured Telephone Rates on Telephone Usage of Government and Nonprofit Organizations" (for the Public Utilities Commission of Ohio) and "Toward An Analysis of Telephone License Contracts and Measured Rates" (for the Maryland Public Service Commission).

In addition, I have provided several state Commissions with technical and economic assistance. This assistance was related to identifying, explaining and analyzing major issues in telecommunications cases. Since joining J.W. Wilson &

Associates, Inc. in May 1980, I have provided economic analysis in numerous proceedings in most of the states of the United States, Canada, Bolivia, Nepal, Egypt, and Tanzania. I have provided analysis for the Federal Communications Commission and the United States Department of Justice. For example, I testified on behalf of the Department of Justice in the case that broke up the Bell system. In addition, I have worked for numerous State Attorney Generals. For example, I evaluated the merger proposal of Bell Atlantic and NYNEX for the National Association of Attorneys General, and the Bell Atlantic and GTE merger proposal for the Pennsylvania Attorney General. I also analyzed the merger proposal of MCI and WorldCom for the California Public Utilities Commission.

Q. ARE YOU A MEMBER OF ANY PROFESSIONAL ORGANIZATIONS AND HONOR SOCIETIES?

A. Yes. I am a member of the Society of Depreciation Professionals, the American Economic Association, Omicron Delta Epsilon (an international honor society in economics) and Beta Gamma Sigma (an honor society in business).

Q. COULD YOU BRIEFLY SUMMARIZE YOUR PROFESSIONAL RESPONSIBILITIES TO DATE?

A. Yes. My primary responsibilities have been to supervise and actively participate in public utility regulatory policy research, especially in the telecommunications

field. These responsibilities require the use and application of economic, accounting, and engineering analyses.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I present this testimony on behalf of the South Carolina Consumer Advocate.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to define market abuse and discuss the various behaviors that are representative of market abuse. I will also discuss a recommendation for an inflation-based index for companies under alternative regulation in South Carolina.

II. MARKET ABUSE

Q. WHAT IS MARKET CONCENTRATION AND MARKET POWER?

A. Market concentration is the degree to which a market is dominated by one or a few large firms. In the case of the telecommunications industry, a few large Incumbent Local Exchange Carriers ("ILECs") have dominated the provision of local exchange service. Due to the lack of competition in the market, if ILECs were unregulated (or improperly regulated) they would have a significant level of market power.

The FCC defines market power as, "the ability to raise prices by restricting output" or "to raise and maintain price above the competitive level without driving away so many customers as to make the increase unprofitable."[1]

Price theory illustrates how a monopoly (or dominant) provider of service has market power and therefore, has the ability to adjust prices upwards or downwards as it wishes in order to achieve excessive profits, as well as prevent/drive competitors out of the market.

Q. WHY WOULD A FIRM WITH MARKET POWER ADJUST PRICES DOWNWARDS?

A. A firm with market power has the ability to engage in "limit pricing" (also known as "exclusionary pricing"). Limit pricing is when a company reduces prices in the short run (and may even forego profits temporarily) in order to prevent competitors from entering the market and/or to drive competitors out of the market. If the prices for products and services are so low that no competitor is able to match or beat the prices offered by the firm, they will not enter the market and those competitors that are in the market will be run out of business. Such a strategy is called limit pricing because it limits short-run profits in the hope of limiting entry. Subsequently, the firm is able to raise prices above competitive

[1] Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authoritizations, CC Docket No. 79-252, Fourth Report and Order ("Fourth Report & Order"), 95 FCC.2d 554, 558 (1983).

levels and earn higher profits than would have been possible if the competitors had not exited or been deterred from entering the market.

Q. WHEN WOULD A FIRM WITH MARKET POWER ENGAGE IN EXCLUSIONARY PRICE BEHAVIOR?

A. A firm with market power will utilize limit/exclusionary price strategy if it believes it will succeed in driving competitors from the market or deterring their entry all together. Otherwise, the firm will not lower prices below competitive levels because they will not be able to recoup the lost profits and the firm would be worse off than if it had not engaged in exclusionary pricing behavior.

Q. WHAT OTHER TYPES OF PRICING BEHAVIOR REPRESENT ABUSE OF MARKET POWER?

A. Dominant or monopoly firms can also engage in market abuse by pricing goods and services above reasonable price levels. Even in cases where there are a few firms that are the principal suppliers of a particular good or service, the firms may have a certain amount of monopoly power, in the sense that it, unlike a perfectly competitive firm, will find it profitable to raise its price above marginal cost.

Similarly, monopoly (or dominant) firms can utilize price discrimination if it has significant market power. Price discrimination occurs when the same commodity is sold at more than one price. Price discrimination arises when the buyers of the service/product have considerable differences in the price elasticity of demand for

the product/service, and these classes can be identified and separated. The differences between classes of buyers in the price elasticity of demand may be due to differences between the classes taste, availability of substitutes or income level.

Q. WHAT IS PRODUCT BUNDLING AND TYING AND HOW CAN FIRMS WITH MARKET POWER BENEFIT FROM THESE PRICING TECHNIQUES?

A. Bundling occurs when a firm requires customers that buy one of its products to buy another of its products as well.[2] For example, often times in order to have access to HBO from a cable company, you are also required to pay for basic cable and expanded basic cable. It is more profitable for cable companies to bundle all these cable packages together in order provide HBO, rather than to just offer HBO as a stand-alone cable option.

Another way dominant firms can use bundling to increase profit and retain market power is to offer two or more products/services at a discount; thus customers who purchase a bundled package from the firm pay a lower price than if they purchased each product/service separately. Recently, many telecommunications companies have utilized this technique to try and retain and/or lure customers to them. For example, Verizon Washington DC now offers a service called the "Verizon Freedom Package." This bundled package offers consumers unlimited

[2] *See* Microeconomics: Theory and Applications, 8th Edition, by Edwin Mansfield. Chapter 10, (1994).

local, toll and long distance calling anywhere in the U.S. and Canada. Additionally, the Freedom Package includes multiple services such as voice mail, caller-id, call-waiting and 3-way calling for a fixed monthly charge. The monthly charge for the Freedom Package is lower than if a consumer purchased these products and services separately or from different firms (such as local service from one company and long distance service from a second separate company).

Tying is another technique that is sometimes used by firms with monopoly power. Tying is when a firm produces a product that will only function properly if it is used in conjunction with another product (and may require customers to buy that product from them rather than an alternative supplier).[3] For example, Qwest Long Distance company in the western United States tied local exchange service to toll services; one could only buy their toll service if you also purchase local exchange service.

Q. DO YOU AGREE WITH DR. SPEARMAN'S EXPLANATION OF "ABUSE OF MARKET POSITION" AND HIS INTERPRETATION OF THE KINDS OF ANTICOMPETITIVE BEHAVIORS TELECOMMUNICATIONS FIRMS MAY CONDUCT?

[3] *Id.*

A. Yes, Dr. Spearman has presented an excellent discussion on abuse of market power. I agree with Dr. Spearman's definition of abuse of market position as well as his opinion that the Commission must consider allegations of market abuse on a case-by-case basis, even when prices decrease as well as increase, rather than establishing a checklist of activities that if conducted by a firm, concludes they have abused their market power.[4]

III. INFLATION-BASED INDEX

Q. WHAT IS AN INFLATION-BASED INDEX?

A. The purpose of an inflation-based index is to develop a method that can be applied to local exchange rates for those companies using alternative regulation. These telephone companies can choose to change their rates for basic local exchange service anywhere within the index. If the price is $10 and the index says an increase of 5% is allowable, then rates could increase to $10.50. The concept has been used in regulatory telecommunications companies since the 1990s. Generally, the method is patterned after the FCC's model that used GDP-PI (a price index) minus a productivity factor.

[4] *See* Direct Testimony of James Spearman, Ph.D., Public Service Commission of South Carolina in the Proceeding to Address the Definition of "Abuse of Market Position" at p. 9 (2003).

Q. CAN YOU FURTHER EXPLAIN THE FCC PLAN?

A. The FCC established a formula for determining the maximum prices certain ILECs could charge for their various interstate access services in its *LEC Price Cap Order*[5]. The FCC explained:

> "Price cap regulation seeks to replicate the beneficial incentives of competition in the provision of interstate access services, while striking a reasonable balance between the interests of ratepayers and stockholders. Price cap regulation is intended to encourage growth in productivity by permitting incumbent LECs that increase their productivity to earn higher profits, while at the same time ensuring that interstate access customers share in the benefits of productivity growth in the form of lower rates. The price cap formula was designed to ensure that '[b]oth carriers and customers will be better off' under price cap regulation.
>
> The Commission adopted LEC price cap regulation in 1990 because it found that rate-of-return regulation did not create adequate efficiency incentives for incumbent LECs, and required administratively burdensome cost allocation rules to enforce. Rather than adjusting prices to allow LECs the opportunity to earn a pre-determined return on interstate investment, price cap regulation directly regulates prices and allows earnings to vary. Under price cap regulation, the ceiling or maximum price a LEC can charge for interstate access services is adjusted annually by a measure of inflation minus an 'X-Factor.' A separate adjustment is made for 'exogenous' cost changes, which are changes outside the carrier's control and not otherwise reflected in the price cap formula" (emphasis added).[6]

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5 Policy and Rules Concerning Rates for Dominant Carriers, CC Docket No. 87-313, Second Report and Order, 5 FCC Rcd 6786, 6818-20 (*LEC Price Cap Order*). Note that the FCC's Price Cap regulation was revised in the 1997 Price Cap Review Order as well as the Fifth Report & Order in 1999.

6 Price Cap Performance Review for Local Exchange Carriers, Fourth Report and Order in CC Docket No. 94-1 and Second Report and Order in CC Docket No. 96-262, at ¶2-3. (1997) ("1997 Price Cap Review Order").

Under the FCC's price cap regulation, local exchange carriers are required to divide the access rate elements of their various interstate services among four "baskets": common line, traffic sensitive, trunking and interexchange. Each basket is subject to an annual price cap index ("PCI"), which caps the total charges a LEC may impose for interstate access services in that basket.[7] The service categories prevent LECs from offsetting increases in the prices of services within one category by reducing the prices of services in another category of the same basket.

Q. HOW DOES THE FCC CALCULATE PCI?

A. The formula that governs the PCI consists of three main elements – an inflation factor, a productivity factor and exogenous costs. The inflation factor is based on the Gross National Product Price Index ("GNP-PI"). The productivity factor, or "X-Factor" reflects the amount by which LEC productivity gains are expected to exceed productivity gains in the economy as a whole. Exogenous costs represent changes outside the carrier's control and otherwise not reflected in the price cap

[7] In the Matter of Access Charge Reform; Price Cap Performance Review for Local Exchange Carriers; Interexchange Carrier Purchases of Switched Access Services Offered by Competitive Local Exchange Carriers; Petition of US West Communications, Inc. for Forbearance from Regulation as a Dominant Carrier in the Phoenix, Arizona MSA. CC Docket No. 96-262; CC Docket No. 94-1; CCB/CPD File No. 98-63; CC Docket No. 98-157, Fifth Report and Order and Further Notice of Proposed Rulemaking ("Fifth Report & Order"), FCC 99-206, at ¶12 (Aug. 5, 1999).

formula (such as administrative, legislative, or judicial action beyond the carrier's control).[8]

The ceiling or maximum price a LEC can charge for interstate access services is adjusted annually using the PCI formula of:

$$PCI = Inflation - Factor\ X + /- Exogenous\ Costs$$[9]

Q. EXPLAIN THE PURPOSE OF THE PRODUCTIVITY FACTOR

A. The productivity factor (or "X Factor") represents the ratio of a firm's total output to its total input. The FCC used a Total Factor Productivity ("TFP") Model to calculate the X Factor. In general, TFP models measure productivity as the ratio of an index of the firm's output (where output can be measured as minutes of use or number of access lines) to an index of its inputs (where inputs represent labor, materials and capital services).[10]

In a separate statement of Commissioner Rachelle B. Chong, Commissioner Chong explained that the FCC chose the X Factor "after very careful analysis of the growth rate of incumbent LEC total factor productivity ('TFP') and the rate of

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8 In the Matter of Price Cap Performance Review for Local Exchange Carriers; Treatment of Video Dialtone Services Under Price Cap Regulation, Further Notice of Proposed Rulemaking; CC Docket No. 94-1; FCC 95-49 at ¶6, (Feb. 7, 1995).

9 *See*, Fifth Report & Order at ¶12.

10 "Capital Services" have been assumed to be a fixed portion of capital stock. TFP theory and practice estimates the growth in capital services using the assumption that the level of capital services is some fixed portion of the capital stock available at the beginning of the year. Thus, capital services can be measured as the change in the level of capital stock. *See* Price Caps Performance Review for Local Exchange Carriers, Fourth Report and Order, CC Docket No. 94-1, at ¶9-13, (May 7, 1997). ("Fourth Report and Order").

change of LEC input prices."[11] Commissioner Chong also explained that the X Factor represents "a reliable measure of incumbent LEC potential productivity gains."[12]

Q. WHAT IS THE FCC PRESCRIBED VALUE FOR "FACTOR X"?

A. In the 1997 Price Cap Review Order, the FCC prescribed the X Factor Value as 6.5%.

Q. HOW DO THE PRODUCTIVITY FACTOR AND INFLATION FACTOR WORK TOGETHER?

A. Just as Dr. Spearman stated, the GNP-PI inflation factor measures economy-wide inflation rates (it is not industry specific). However, there is no specific telecommunications inflation factor developed by the federal government. The productivity ("X") factor represents expected productivity gains by telephone companies, thus the X-factor makes the inflation-based index more telecommunications-specific. The productivity offset, which is subtracted from the inflation factor reflects the amount by which telephone companies' productivity gains are expected to exceed productivity gains in the economy as a whole.

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[11] *See* Separate Statement of Commissioner Rachelle B. Chong. Fourth Report and Order, CC Docket No. 94-1.

[12] Id.

Q. DO YOU AGREE WITH DR. SPEARMAN'S TESTIMONY THAT IF THE CPI WERE USED AS THE INFLATION-BASED INDEX, THERE SHOULD NOT BE A PRODUCTIVITY OR X-FACTOR ADJUSTMENT INCLUDED?

A. No. Dr. Spearman provides an excellent analysis of the inflation index, but needs to take it one step further. Any price index alone will not capture the true telecommunications service cost changes. In fact, national price indices only capture the change in price to consumers. For example, if prices increased by 10% one year the simple application of that index would generate a perpetual 10% price increase even if costs went down or changed by only 5%. Dr. Spearman correctly explained in his testimony that:

> "Consumer prices as measured by the CPI have already incorporated productivity impacts. Because of its broad coverage, we can assume that the CPI represents competitively determined prices. Competitive prices will reflect changes in productivity."[13]

The statement is correct but it is well recognized that productivity in the telecommunications industry has outpaced general productivity. The CPI does not capture telecommunications productivity changes. The consumer price index produces data on "changes in the prices paid by urban consumers for a representative basket of goods and services."[14] The index therefore, can be used to calculate the rate of inflation (by computing the percentage change in CPI).

However, the index does not track productivity increases or decreases in the telecommunications industry. Moreover, the CPI is one of the most comprehensive statistical measures, therefore, it does not shed any light on the productivity changes in the telecommunications sector specifically.

Furthermore, I do not believe the CPI incorporates productivity changes relative to the telecommunications sector because the telecommunications industry prices reflected in the CPI do not reflect price like other markets that are competitive and not regulated. The resulting prices are therefore not correlated to changes in output/productivity. Due to the regulatory requirements on ILECs, the changes in prices in their products and services cannot be assumed to reflect changes in productivity.

Q. DO YOU AGREE WITH DR. SPEARMAN'S TESTIMONY THAT IF THE GDP-DEFLATOR WERE USED AS THE INFLATION-BASED INDEX, THERE SHOULD NOT BE A PRODUCTIVITY OR X-FACTOR ADJUSTMENT INCLUDED?

With regard to the GDP-Deflator, Dr. Spearman explained:

> "I would not include a productivity adjustment to a GDP-Deflator. A productivity adjustment would be inappropriate for the same reasons it is inappropriate for a CPI inflation-based index. The

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[13] *See* Direct Testimony of James Spearman, Ph.D., Public Service Commission of South Carolina in the Proceeding to define the term "Inflation-Based Index" at p. 4, (2003).

[14] *See* Bureau of Labor Statistics website: http://www.bls.gov/cpi/home.htm#overview

prices of goods and services purchased by consumers already include the impacts of productivity."[15]

The statement is only true in a very overall national economy sense and does not reflect the case in telecommunications. That is the reason the FCC and every state that I am aware of uses an inflation based index minus a productivity factor. Productivity is not included in the GDP-Deflator for the same reasons I believe telecom productivity gains are not satisfactorily incorporated in the CPI.

Additionally, although GDP measures production of goods, services and structures, it tells us nothing about the composition of the output. A larger GDP indicates that the dollar value of total output increased – it does not tell us whether the increase was due to the increased production of new homes and schools, increased productivity in services industries, etc. Although the GDP can be used as an appropriate general economy inflation-index, it does not accurately portray productivity gains in the telecommunications industry. The telephone companies recognize that a general inflation index does not capture changes in telecommunications costs. Generally, the telephone companies use specific telephone plant price indices when undertaking projected cost studies.

[15] *See* Direct Testimony of James Spearman, Ph.D., Public Service Commission of South Carolina in the Proceeding to define the term "Inflation-Based Index" at p. 9, (2003).

Q. WHAT INFLATION-BASED INDEX DO YOU RECOMMEND THE PSC ADOPT IN SOUTH CAROLINA?

A. I recommend that the PSC structure their inflation-based formula on the FCC's formula. Therefore, I recommend the following formula:

Price Cap Index = Inflation Factor – Productivity Factor.

Where, the inflation factor is either the GDP or CPI and the Productivity Factor is in the range of 2-3%.

Q. DO YOU KNOW OF ANY STATE COMMISSIONS THAT UTILIZE PRICE CAP PLANS WITH INFLATION AND PRODUCTIVITY FACTORS TO REGULATE THE PRICE OF TELECOMMUNICATIONS SERVICES?

A. Yes, numerous states utilize price cap regulation that includes both inflation and productivity factors. For example, Alabama, Connecticut, Utah, Iowa and Pennsylvania all have price cap plans in effect that incorporate both inflation and productivity factors.[16]

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[16] *See*, State of Alabama, Public Service Commission, Report and Order, associated with Dockets No. 24499, No. 24472, No. 24030 and No. 24865 at §06.00, (Sept. 20, 1995). ("Alabama Price Cap").
See also, Application of The Southern New England Telephone Company for Financial Review and Proposed Framework for Alternative Regulation ("Alt Reg Plan"), Docket No. 95-03-01, Decision, (Mar. 13, 1996).
See also, DPUC Investigation of the Southern New England Telephone Company's Alternative Regulation Plan, Docket No. 00-07-17, Decision, (May 16, 2001).
See also, Utah Administrative Code, Price Cap Regulation, Rule R746-352 (Mar. 3, 2003).
See also, Petition of Verizon North, Inc. for Alternative Regulation Plan and Plan and Plan for Network Modernization, Opinion and Order P-00001854 (July 26, 2001).

Q. PROVIDE SOME EXAMPLES OF HOW THE STATES YOU CITED ABOVE OPERATE THEIR PRICE CAP PLANS.

A. In Alabama the price cap plan allows prices to increase based on annual changes in the GDP-PI, reduced by an efficiency factor, and any penalties for missing quality of service parameters. The efficiency factor for Bell South is set at 3% and the efficiency factor for all non-Bell South local exchange carriers is 1%.[17]

In the recent Price Cap Regulation proceeding in Utah, the price cap index formula was established as follows:

> The Price Cap Index for the current year, or $PCI_{(t)}$, multiplied by one plus the sum of a measure of inflation ("I"), minus a productivity factor ("X"), plus or minus an exogenous factor ("Z"), minus a service quality adjustment factor ("Q").

$$PCI_{(t)} = PCI_{(t-1)} * (1 + (I - X +/- Z - Q)).$$[18]

The productivity factor to be used in the first year in which the index is in effect (effective March 3, 2003) is 6.2%.[19]

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17 *See also,* US West Communications, Inc. Docket No. RPU-98-4, Sept. 28, 1998 (Iowa U.B.).
See Alabama Price Cap, at §06.00.

18 *See,* Utah Administrative Code, Price Cap Regulation, Rule R746-352 (Mar. 3, 2003).

19 Id.

The Iowa Utilities Board approved a price cap plan for US West Communications in 1998 that limits price changes for basic communications services to the rate of inflation minus a 2.6% productivity factor.

Florida Statute dictates that if it is determined that the level of competition justifies the elimination of price caps, local exchange companies may adjust their basic service prices in any 12 month period by the change in inflation minus 1 percent (where inflation is measured by the changes in Gross Domestic Product 1987 fixed weights, published by the U.S. Department of Commerce).

Over the years, many states have used at one time inflation-based indices. In addition to the states discussed above, California used GNP-PI minus a 4.5% productivity factor, Delaware used GNP-PI minus a 3% productivity factor, Pennsylvania used GNP-PI minus 2.5%, and Oregon used a 4% productivity factor. Most importantly, I am not aware of any state that allowed basic local exchange rates to increase by an inflation index without a productivity offset.

Q. SUMMARIZE YOUR CONCLUSIONS REGARDING AN INFLATION-BASED INDEX IN SOUTH CAROLINA

A. I recommend that the South Carolina Public Service Commission implement an inflation-based index that limits price increases/decreases for telecommunications services using a formula which consists of an inflation factor minus a productivity factor of 2% to 3% (consistent with the formulas adopted by the FCC and many

other state Commissions). I do not believe that utilizing the CPI or GDP-Deflator without a productivity factor will adequately measure a telephone company's actual changes in costs to provide service in South Carolina.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.